



# LASE 1000T Grey-Line Series

1D Distance meter



**The sensors from the LASE 1000T Grey-Line Series are contactless one-dimensional distance meters especially built for the operation in harsh industrial environments.**

The sensors out of the LASE 1000T Black-Line MINI Series are typically used for contactless distance, thickness or width measurements. The devices produce a visible laser point onto an object while the relative position of this laser point is evaluated by a high resolution CCD line camera. From the position of this point along the CCD line, the distance is computed to the object. Due to this procedure an accuracy of up to 0,001 mm depending on its measuring range can be achieved and the range on natural surfaces amounts to max. 170 mm. The sensors incorporate an automatic regulation of the light intensity and thereby provide unsurpassed measuring characteristics.

The LASE 1000T Sensor Series in general are compact units because of the fact that all optical elements are integrated with the electronic components in a highly durable aluminium housing. The sensors do not contain mobile parts and are appropriate for measurement tasks in heavy industrial environments and where precision demands have to be better than 1 mm, e.g. at thickness measurements or quality controls.

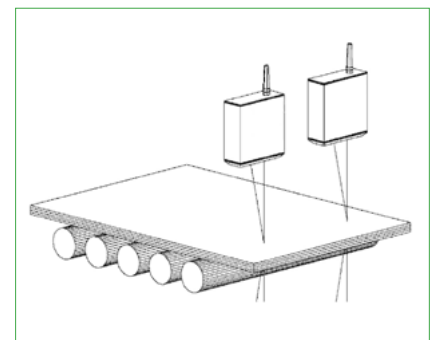
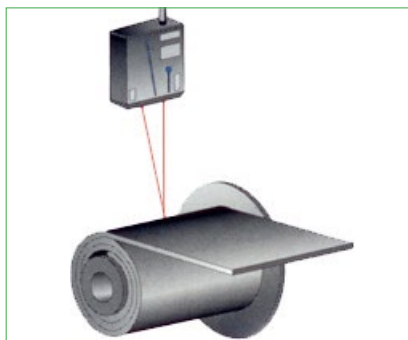
**The distance sensors of the LASE 1000T-series are optical measuring instruments which work according to the triangulation principle. This technique ensures highest accuracies within  $\mu\text{m}$  of range:**

- Measurement length, width, height, level and position of objects
- Positioning of machine parts
- Quality control of paper, steel or aluminum coils
- Slab width and thickness measurement
- Measurement of liquid levels and solid materials
- Measurement and regulation of slack

#### Features and Benefits:

- Contactless distance measurement
- Measuring area up to 100 mm
- Measurement range up to 170 mm
- Highest accuracy in the  $\mu\text{m}$ -area
- High measuring rate [up to 2 kHz]
- Interfaces: analog, digital (RS 232 or RS 422) and Ethernet
- Suitable for measurements on nearly all surfaces
- Simple installation at each position
- Rugged construction type to IP 65
- Closed-loop control of light intensity

## Typical applications



## Technical data

| Model | LASE 1000T-72.5 | LASE 1000T-75 | LASE 1000T-82.5 | LASE 1000T-95 | LASE 1000T-120 |
|-------|-----------------|---------------|-----------------|---------------|----------------|
|-------|-----------------|---------------|-----------------|---------------|----------------|

### DISTANCE MEASUREMENT

|                       |            |            |            |             |             |
|-----------------------|------------|------------|------------|-------------|-------------|
| Measuring range       | 70 - 75 mm | 70 - 80 mm | 70 - 95 mm | 70 - 120 mm | 70 - 170 mm |
| Center distance       | 72,5 mm    | 75 mm      | 82,5 mm    | 95 mm       | 120 mm      |
| Spot size             | Ø 0,2 mm   | Ø 0,3 mm   |            | Ø 0,4 mm    |             |
| Laser safety class *1 | IEC 2      |            |            |             |             |

### SCAN AND PROFILE MEASUREMENT

|                                      |            |            |            |            |            |
|--------------------------------------|------------|------------|------------|------------|------------|
| Resolution [at short range] *2       | 0,001 mm   |            |            |            |            |
| Resolution [at long range] *2        | 0,001 mm   |            | 0,002 mm   |            | 0,005 mm   |
| Linearity *2                         | ± 0,003 mm | ± 0,004 mm | ± 0,008 mm | ± 0,013 mm | ± 0,025 mm |
| Temperature deviation [0° ... 40° C] | ± 1,5 µ/C° |            | ± 2,5 µ/C° | ± 5 µ/C°   | ± 10 µ/C°  |
| Measuring frequency *2               | 2 / 1 kHz  |            |            |            |            |
| Wave length                          | 655 nm     |            |            |            |            |

### INTERFACES

|            |                  |  |  |  |  |
|------------|------------------|--|--|--|--|
| Analog *3  | 4-20 mA          |  |  |  |  |
|            | 1-9 V            |  |  |  |  |
| Digital *4 | RS 232 or RS 422 |  |  |  |  |

### ELECTRICAL & MECHANICAL

|                   |                  |  |  |  |  |
|-------------------|------------------|--|--|--|--|
| Power supply      | 24 V DC ± 10 %   |  |  |  |  |
| Power consumption | max. 4,5 W       |  |  |  |  |
| Protection class  | IP 65            |  |  |  |  |
| Dimensions        | 95 x 120 x 30 mm |  |  |  |  |
| Weight            | approx. 370 g    |  |  |  |  |

### ENVIRONMENT DATA

|                   |  |  |  |  |  |
|-------------------|--|--|--|--|--|
| Temperature range | operation: 0° ... 45° C *3; storage: -20° C ... +70° C |  |  |  |  |
| Humidity          | max. 90% relative humidity                             |  |  |  |  |

#### Declarations:

\*1) Laser class IEC 3R at HT and VHT sensor series with a frequency of 1 or 2 kHz

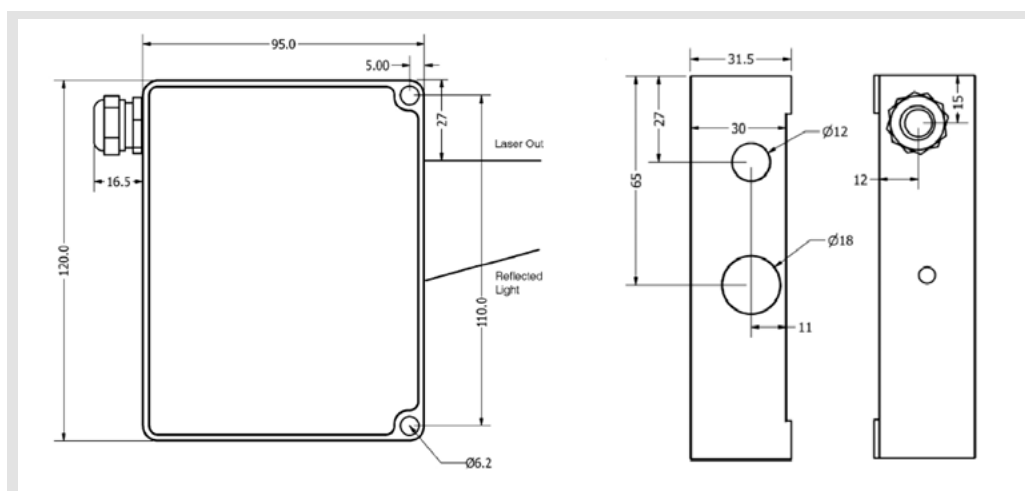
\*2) Resolution, Linearity and Frequency valid for static measurements on white paper

\*3) Resolution, Linearity and Frequency valid for static measurements on white paper

\*4) Analog output: 14 Bit DAC's are used for the conversion of the digital distance result (nominal resolution 0,01 mm)

#### Scope of delivery:

- Sensor
- Operating instruction
- Configuration Software



## Contact

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